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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,549	10/28/2003	Rycharde Jeffery Hawkes	30018432-2	5467

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EXAMINER	
STEVENS, THOMAS H	
ART UNIT	**PAPER NUMBER**
2121	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/695,549	HAWKES ET AL.	
	Examiner	Art Unit	
	Thomas H. Stevens	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-14 were examined.

Section I: Non-Final Rejection

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by French et al., titled, "The Hi-Noon Neural Simulator and its Applications to Animal, Animat (title) and Humanoid Studies" (hereafter French). French teaches a general-purpose object-oriented software system (abstract).

Claim 1. A method of simulating (title) a creature (pg 2066, "Generating Circuits" section, lines 2-3) for use in two different complexities (pg. 2051, Intro, lines 12-21) of simulation, the method comprising utilizing a model of the creature (pg 2066, "Generating Circuits" section, lines 2-3) that comprises at least two portions, a first portion which contains functions (pg.2057, "Proximal and Distal mode functions") for use in both of said different complexities of simulation (abstract, "computational complexity and biological realism", lines 4-7; e.g., pg. 2052, section 2.1, "Network Model" and "Neural Model"); and a second portion comprising two alternative versions (pg.2058,

noise-free synapse and noisy synapse version), a first version (e.g., noise free synapse, pg. 2058)for use in one of said different complexities (pg. 2051, Intro, lines 12-21)of simulation, and a second version (e.g., noise synapse, pg. 2058) for use in the other of said different complexities (pg. 2051, Intro, lines 12-21) of simulation .

Claim 2. A method as claimed in claim 1, wherein said first portion comprises a behavior ("behavior in lower animals", abstract, lines 1-3) selection mechanism arranged to select the behavior ("behavior in lower animals", abstract, lines 1-3) of said creature (pg 2066, "Generating Circuits" section, lines 2-3) .

Claim 3. A method as claimed in claim 2, wherein said behavior ("behavior in lower animals", abstract, lines 1-3) selection mechanism is arranged to select the behavior ("behavior in lower animals", abstract, lines 1-3) based upon at least one of: the current behavioral ("behavior in lower animals", abstract, lines 1-3) state; one or more internal state variables (pg. 2054, section, 2.3, bullets 1-3 "set of parameters") of the creature (pg 2066, "Generating Circuits" section, lines 2-3); the environment surrounding the creature (pg 2066, "Generating Circuits" section, lines 2-3) ; one or more sensory inputs to said creature (pg 2066, "Generating Circuits" section, lines 2-3) .

Claim 4. A method as claimed in claim 2, wherein said behavior ("behavior in lower animals", abstract, lines 1-3) selection mechanism consists of a set of mutually exclusive behavioral ("behavior in lower animals", abstract, lines 1-3) states.

Claim 5. A method as claimed in claim 1, wherein the second version (e.g., noise synapse, pg. 2058)is for use in the less complex of the simulations, and is arranged to approximate the functionality of the first version (e.g., noise free synapse, pg. 2058).

Claim 6. A method as claimed in claim 1, wherein the first version (e.g., noise free synapse, pg. 2058) utilizes a neural network (Intro, page 2051, line 21, "one could even use Hi-Noon as the simulator for a highly conventional PDP-type artificial neural network").

Claim 7. A method as claimed in claim 2, wherein said second portion is arranged to execute the selected behavior ("behavior in lower animals", abstract, lines 1-3) .

Claim 8. A method as claimed in claim 1, wherein the first version (e.g., noise free synapse, pg. 2058) utilizes a three dimensional physical simulation of the animat (title), and the second version (e.g., noise synapse, pg. 2058) utilizes a parameterized model of the animat (title) to approximate movement.

Claim 9. A method of simulating (title) the activities of a plurality of creatures (pg 2066, "Generating Circuits" section, lines 2-3), the method comprising utilizing at least two modes of simulation: a second mode (applicants definition of term is broad, therefore examiner provides example of specific mode pg.2057, "distal mode") arranged to simulate the activities of all of said creatures (pg 2066, "Generating Circuits" section,

lines 2-3); and a second mode (applicants definition of term is broad, therefore examiner provides example of specific mode pg.2057, "proximal mode") arranged to simulate an activity of at least one of said creatures (pg 2066, "Generating Circuits" section, lines 2-3) at a more detailed level than said first mode, wherein a model of a creature (pg 2066, "Generating Circuits" section, lines 2-3) simulated in both modes of simulation comprises at least two portions: a first portion which contains functions (pg.2057, "Proximal and Distal mode functions")arranged for use in both of said modes of simulation; and a second portion comprising two alternative versions (pg.2058, noise-free synapse and noisy synapse version), a first version (e.g., noise free synapse, pg. 2058)for use in said second mode (applicants definition of term is broad, therefore examiner provides example of specific mode pg.2057, "distal mode")of simulation, and a second version (e.g., noise synapse, pg. 2058)for use in the second mode.

Claim 10. A method of simulating (title) a process at two different levels of complexity, (page 2051, Introduction, lines 12-18) the method comprising utilizing a model that comprises at least two portions, a first portion which contains functions (pg.2057, "Proximal and Distal mode functions") for use in both of said different complexities of simulation; and a second portion comprising two alternative versions (pg.2058, noise-free synapse and noisy synapse version), a first version (e.g., noise free synapse, pg. 2058) for use in one of said different complexities (abstract, "computational complexity and biological realism", lines 4-7; e.g., pg. 2052, section 2.1, "Network Model" and

"Neural Model")of simulation , and a second version (e.g., noise synapse, pg. 2058)for use in the other of said different complexities (pg. 2051, Intro, lines 12-21)of simulation .

Claim 11. A method as claimed in claim 10, further comprising evaluating one or more conditions to determine a result of a rule for selecting (pg. 2056, neuron equations and their limits) which of the two alternative versions (pg.2058, noise-free synapse and noisy synapse version) of the second portion to use in simulating (title) the process.

Claim 12. A method as claimed in claim 10, wherein the second version (e.g., noise synapse, pg. 2058)is for use in the less complex of the simulations, and is arranged to approximate the functionality of the first version (e.g., noise free synapse, pg. 2058).

Claim 13. A method as claimed in claim 10, wherein the first version (e.g., noise free synapse, pg. 2058) utilizes a neural network (Intro, page 2051, line 21, "one could even use Hi-Noon as the simulator for a highly conventional PDP-type artificial neural network").

Claim 14. A simulator device arranged to simulate a creature (pg 2066, "Generating Circuits" section, lines 2-3) in two different complexities (abstract, "computational complexity and biological realism", lines 4-7; e.g., pg. 2052, section 2.1, "Network Model" and "Neural Model") of simulation; the device being arranged to utilize a model of the creature (pg 2066, "Generating Circuits" section, lines 2-3) that comprises at least

two portions: a first portion which contains functions (pg.2057, "Proximal and Distal mode functions") used in both of said different complexities of simulation; and a second portion comprising two alternative versions (pg.2058, noise-free synapse and noisy synapse version), a first version (e.g., noise free synapse, pg. 2058)used in one of said different complexities of simulation, and second version (e.g., noise synapse, pg. 2058)used in the other of said different complexities (pg. 2051, Intro, lines 12-21)of simulation.

Section II: Response to Arguments
Specification

4. Applicants are thanked for responding to this issue. The objection is withdrawn.

102(b)/103(c)

5. Applicant's arguments, see pages 6-15, filed 18 January 2007, with respect to the rejection(s) of claims 9 and 1-8, 10-14 under 35 U.S.C 102(b) and 103(c), respectively, have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made in view of French.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicants' disclosure:

- Terzopoulos-D., "Artificial Life for Computer Graphics" ACM 1999 pg. 33-43; teaches a computer graphics modeling for image synthais.

- Sander-M.J., "Evolving Locomotion Controllers for Virtual Creatures", Univ. of Auckland Feb. 2000 pg.1-76; teaches automating the locomotion of virtual creatures.

- "Videre: Journal of Computer Vision Research" MIT Press 1997 pg. 1-20; teaches emulating the appearance, motion, and behavior of real fishes in the natural habitats.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (7:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Anthony Knight 571-272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

Anthony Knight
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Tech Center 2100